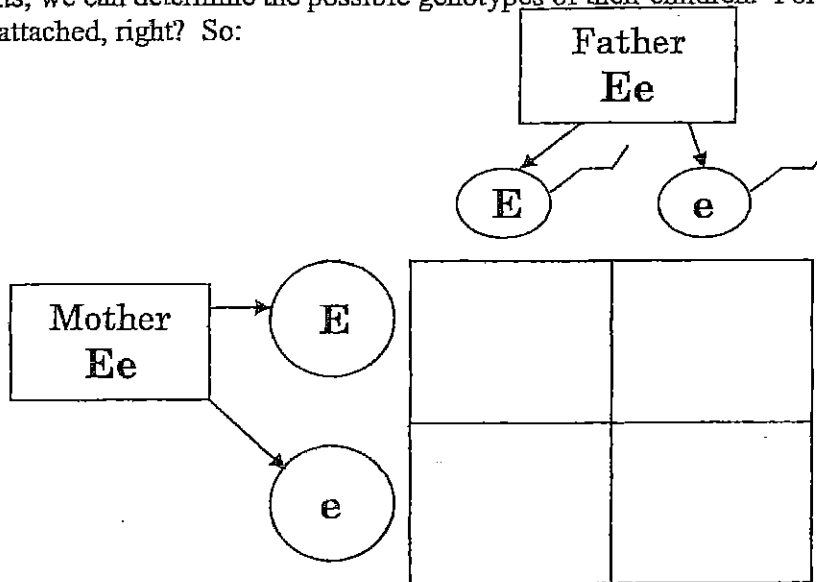


Name: _____ Period: _____

PUNNETT SQUARES

Punnett Squares are used to *predict* the chances of certain genetic conditions. Using the genotypes of the parents, we can determine the possible genotypes of their children. For example, free earlobes are dominant over attached, right? So:



What is the genotype of the mom? _____ What is the genotype of the dad? _____

What is the phenotype of the mom? _____ What is the phenotype of the dad? _____

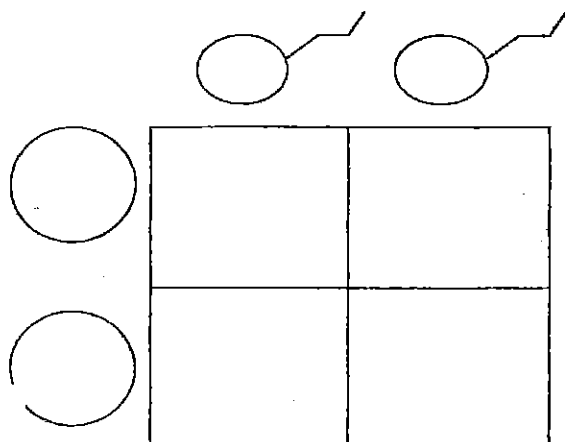
What percent chance does each child have of having the following genotypes?

EE _____ Ee _____ ee _____

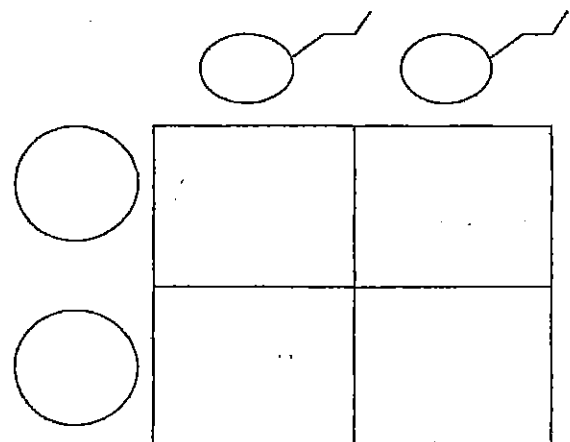
What percentage does each child have of having: free earlobes? _____ attached earlobes? _____

Complete the following Punnett Squares:

Dad is EE, Mom is ee



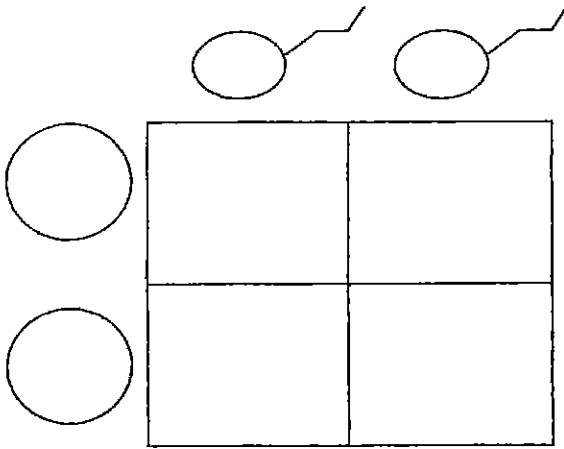
Dad is EE, Mom is Ee



Complete the following Punnett Squares using the information above each one, then answer the questions.

Fill in ALL of the circles!!!

Dad is homozygous recessive and Mom is heterozygous for the earlobe trait.



What percent chance does each child have of having the following genotypes?

EE _____

Ee _____

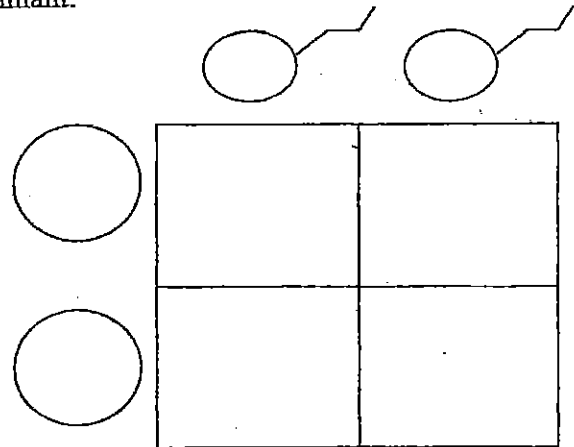
ee _____

What percent chance does each child have of having:

free earlobes? _____

attached earlobes? _____

Dad is heterozygous and Mom is homozygous dominant.



What percent chance does each child have of having the following genotypes?

EE _____

Ee _____

ee _____

What percent chance does each child have of having:

free earlobes? _____

attached earlobes? _____

This next part is very important! Read it carefully!

We also use something called **ratios**. There are genotypic ratios and phenotypic ratios. In the Punnett Square to the right, there is one AA, two Aa's, and one aa. So we say that the *genotypic ratio* is 1:2:1 (you say this "one to two to one"). The *phenotypic ratio* is 3:1 because three of these will show the dominant phenotype and one will show the recessive phenotype. Always list dominant first, then the recessives. Also, you should simplify ratios when you can, so 2:4:2 would become 1:2:1.

Using the Punnett Square at the top left of this page, answer the next two questions:

What is the genotypic ratio for this cross? _____

What is the phenotypic ratio for this cross? _____

